

Terwilliger Valley Groundwater Basin

- Groundwater Basin Number: 7-26
- County: Riverside
- Surface Area: 8,030 acres (12.5 square miles)

Basin Boundaries and Hydrology

This basin underlies Terwilliger Valley, which ranges in elevation from about 3,000 to 6,000 feet above sea level. The basin, which is located in the southwest part of the Colorado Desert, is bounded on the west and east by impermeable basement rocks of the Peninsular Ranges, on the north by a surface water divide, and on the south where impermeable rocks constrict flow through Coyote Canyon.

Average annual rainfall ranges from 14 to 18 inches. Terwilliger Valley is drained by Coyote Creek.

Hydrogeologic Information

Water Bearing Formations

The main water-bearing units in the basin are Holocene and Pleistocene age alluvium.

Holocene age alluvium is composed of unconsolidated boulders, gravel, sand, silt, and clay and is generally only a few feet thick. In most places the Holocene alluvium is above the regional water table and is not considered a major groundwater source. Where saturated, it yields water freely to wells (Moyle 1976).

Pleistocene age alluvium is composed of boulders, gravel, sand, silt, and clay. Average specific yield for these deposits is 10 percent. Well logs indicate that the unit ranges in thickness from a few feet to 550 feet; however, gravity survey data indicate that the unit may be as thick as 800 ft near the San Jacinto fault. Most of the highest yielding wells are screened in this Pleistocene age alluvium (Moyle 1976).

Restrictive Structures

The basin is immediately west of a portion of the San Jacinto fault zone. Several smaller faults are present within the basin near outcrops of impermeable rock that bound parts of the basin. It is not known whether or not these faults inhibit groundwater movement.

Recharge Areas

The basin is recharged by runoff that percolates through the Holocene alluvium.

Groundwater Level Trends

A comparison of water level data from 1950 and 1973 led Moyle (1976) to interpret that groundwater levels declined over this period in some parts of the basin because of pumping.

Groundwater Storage

Groundwater Storage Capacity. Unknown.

Groundwater in Storage. Unknown.

Groundwater Budget (Type C)

Moyle (1976) produced a regional water budget that combined information for the Terwilliger Valley Groundwater Basin along with some adjacent basins. A water budget for Terwilliger Valley Groundwater Basin is not available.

Groundwater Quality

Characterization. Several wells in the basin yield water of sodium-calcium bicarbonate character (DWR 1974). TDS content of these waters ranges from 147 (DWR 1974) to 500 mg/L (DWR 1967).

Impairments. Nitrate concentrations greater than 44 mg/L are found in some wells drilled into thin alluvial deposits overlying bedrock. The water levels are shallow and the nitrate probably comes from chemical fertilizers, animal wastes, septic tanks, and decomposition of native plants (Moyle 1976).

Well Characteristics

| Well yields (gal/min) | | |
|-----------------------|----------------------------------|----------|
| Municipal/Irrigation | Range: to 100 gal/min (DWR 1975) | Average: |
| Total depths (ft) | | |
| Domestic | Range: to 200 ft (DWR 1975) | Average: |
| Municipal/Irrigation | Range: | Average: |

Active Monitoring Data

| Agency | Parameter | Number of wells / measurement frequency |
|---|------------------------|---|
| California Department of Health Services. | Title 22 water quality | 1 |

Basin Management

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| Groundwater management: | Most of the basin lies within the Cahuilla Indian Reservation. Details of basin management are unknown. | |
| Water agencies | | |
| Public | Unknown | |
| Private | | |

References Cited

- California Department of Water Resources (DWR). 1967. *Groundwater Occurrence and Quality: San Diego Region*. Bulletin No. 106-2. 235 p.
- _____. 1974. *Water Wells and Springs in the Eastern Part of the Upper Santa Margarita River Watershed, Riverside and San Diego Counties, California*. Bulletin No. 91-22. 214 p.
- _____. 1975. *California's Ground Water*. Bulletin 118.
- Moyle W. R. Jr. 1976. *Geohydrology of the Anza-Terwilliger Area Riverside County, California*. U.S. Geological Survey. Water Resources Investigations 76-10. 25 p.

Additional References

- California Department of Public Works. 1954. *Ground Water Occurrence and Quality, Colorado River Basin Region*. Water Quality Investigations Report No. 4.
- California Department of Water Resources (DWR). 1963. *Desert Areas of Southeastern California Land and Water Use Survey, 1958*. Bulletin 101. 72 p.

Errata

Changes made to the basin description will be noted here.